

AMENDMENTS TO THE CLAIMS

Listing of Claims:

1. (Currently amended) A transgenic plant cell ~~transformed by~~ comprising a Oxidoreductase Stress- Related Protein (ORSRP) coding nucleic acid, wherein expression of said nucleic acid in the plant cell results in increased tolerance to an environmental stress as compared to a corresponding non-transformed wild type plant cell, and wherein the ORSRP is a heat-stable glutaredoxin or thioredoxin protein.
- 2-4. (Canceled)
5. (Previously presented) The transgenic plant cell of claim 1, wherein the ORSRP coding nucleic acid is selected from the group consisting of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49 and homologs thereof.
- 6-7. (Canceled)
8. (Previously presented) The transgenic plant cell of claim 1 wherein the plant cell is derived from a monocotyledonous plant.
9. (Previously presented) The transgenic plant cell of claim 1 wherein the plant cell is derived from a dicotyledonous plant.
10. (Previously presented) The transgenic plant cell of claim 1, wherein the plant cell is derived from a plant selected from the group consisting of maize, wheat, rye, oat, triticale, rice, barley, soybean, peanut, cotton, rapeseed, canola, manihot, pepper, sunflower, borage, safflower, linseed, primrose, rapeseed, turnip rape, tagetes, solanaceous plants, potato, tobacco, eggplant, tomato, Vicia species, pea, alfalfa, coffee, cacao, tea, Salix species, oil palm, coconut, perennial grass, forage crops and Arabidopsis thaliana.
11. (Previously presented) The transgenic plant cell of claim 1 wherein the plant cell is derived from a gymnosperm plant.
12. (Canceled)
13. (Currently amended) A transgenic plant ~~generated from~~ comprising a plant cell according to claim 1 and which is a monocot or dicot plant.
14. (Canceled)

15. (Currently amended) A transgenic plant ~~generated from~~ comprising a plant cell according to claim 1 and which is a gymnosperm plant.

16-17. (Canceled)

18. (Previously presented) A plant expression cassette comprising a ORSRP coding nucleic acid selected from the group consisting of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, and 49 or parts thereof operatively linked to regulatory sequences and/or targeting sequences.

19. (Original) An expression vector comprising a ORSRP encoding nucleic acid selected from the group consisting of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, and 49 or parts thereof or a plant expression cassette of claim 18, whereby expression of the ORSRP coding nucleic acid in a host cell results in increased tolerance to environmental stress as compared to a wild type host cell.

20. (Canceled)

21. (Previously presented) An isolated Oxidoreductase Stress Related Protein (ORSRP) which is selected from the group consisting of SEQ ID NO: 16, 18, 20, 22, 24, 44 and 50.

22-24. (Canceled)

25. (Previously presented) An isolated Oxidoreductase Stress Related Protein (ORSRP) encoding a nucleic acid selected from the group consisting of SEQ ID NO: 15, 17, 19, 21, 23, 45 and 49.

26-28. (Canceled)

29. (Currently amended) A method of producing a transgenic plant comprising an ORSRP coding nucleic acid, wherein expression of the nucleic acid in the transgenic plant results in increased tolerance to environmental stress as compared to a corresponding non-transformed wild type plant, comprising

- a) transforming a plant cell with an expression vector comprising the nucleic acid,
- b) generating from the plant cell a the transgenic plant with an increased tolerance to environmental stress as compared to a corresponding wild type plant,

wherein the ORSRP is a heat-stable glutaredoxin or thioredoxin protein.

30-31. (Canceled)

32. (Previously presented) The method of claim 29, wherein the ORSRP coding nucleic acid is selected from the group consisting of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49 and homologs thereof.

33. (Canceled)

34. (Currently amended) A method of modifying stress tolerance of a plant comprising, modifying the level of expression of an ORSRP in the plant, wherein the ORSRP is a heat-stable glutaredoxin or thioredoxin protein.

35-40. (Canceled)

41. (Previously presented) The method of claim 34, wherein the plant is transgenic.

42-44. (Canceled)

45. (Previously presented) The method of claim 34, wherein ORSRP expression is modified by administration of an antisense molecule and/or by double stranded RNA interference that inhibits expression of ORSPR.

46. (Canceled)

47. (Previously presented) A method for preparing a plant cell with increased environmental stress tolerance comprising transforming a plant cell with a ORSRP encoding nucleic acid selected from the group consisting of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49 and homologs thereof.

48. (Canceled)

49. (Previously presented) A method for selection of plants with increased environmental stress tolerance comprising utilizing a ORSRP encoding nucleic acid selected from the group consisting of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49 and homologs thereof or parts thereof as a DNA marker.

50. (Canceled)